

Characterising the spatial-temporal variation of soil respiration in native forests.

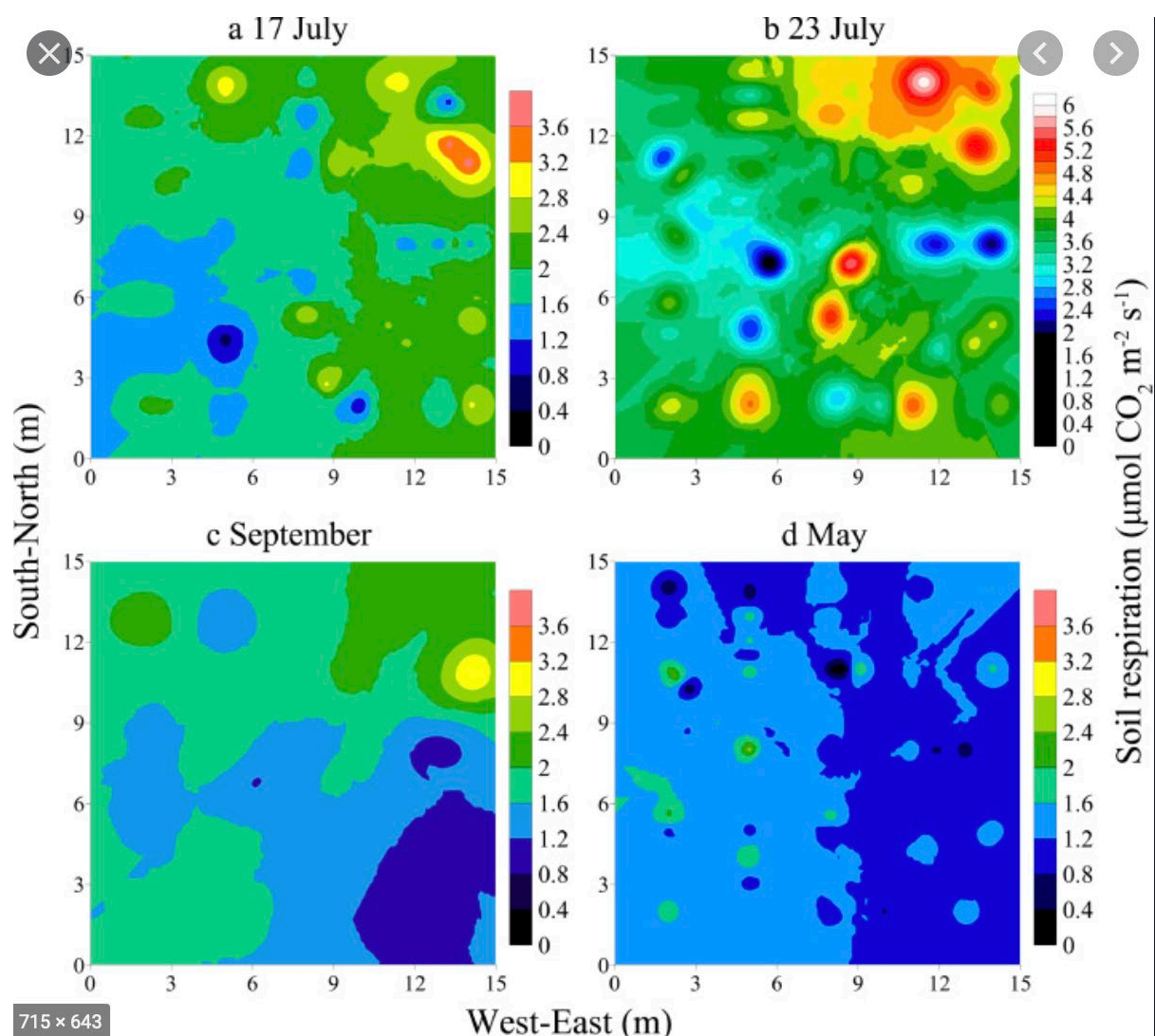
An improved understanding of temporal and spatial variations of soil respiration is essential for accurately measuring soil CO₂ efflux and for assessing ecosystem carbon budget. However, there is a limited understanding on how disturbance from fire and then recovery, affects spatial and temporal variation in soil respiration. Fires are common in Australia and it is one of the main drivers of C exchange in native ecosystems. These ecosystems have adapted to fire and periodic fires cause vegetation renewal, landscape patchiness, large efflux of C to the atmosphere, large influx of stable C (in the form of black C) to the soil, and modifies the nutrient biogeochemical cycles. CO₂ efflux from soil or soil respiration, is one of the key ecosystem processes affected by fire.

The main objective of this study is to quantify the spatial and temporal variability of soil respiration and other biotic and abiotic factors over a growing season in a native forest fire chronosequence.

Activities: field measurements of soil respiration and geostatistical analyses.

Suited to: students who are interested in a combination of field work and spatial-temporal modelling.

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Spatial patterns of soil respiration in the four measurement campaigns (from Shi et al., 2020)
<https://www.sciencedirect.com/science/article/pii/S0168192320300605>